ASSAP MOPS Group Meeting Minutes #19

The attendees included the following:

Last Name	First Name	Organization
Burns	Bob	FAA
Bachman	Larry	APL
Eich	Tom	ACSS
Eftekari	Robert	MITRE/CAASD
Hammer	Jonathan	MITRE/CAASD
Hilb	Bob	UPS
Miller	Dean	Boeing
Moody	Chris	MITRE
Kirk	Dan	MITRE
Ramdeen	Steve	FAA
Riley	Bill	ALPA
Silbermann	Josh	APL
Walker	Don	Honeywell

The ASSAP MOPS group meeting started at 9 am (Eastern Time) on 01 Oct 2007.
Jonathan, co-chair, started the meeting with reviewing the proposed agenda.

1. Meeting Agenda
    a. Review the Draft MOPS Appendix (Robert Eftekari)
    b. Test Scenario Status (Robert Eftekari, Chris Moody, Larry Bachman)
    c. Test Procedure Status (Bob Burns, Dean Miller)
    d. Application Quality/Integrity Discussion (Bob Hilb & Tom Eich)
    e. Review the Draft MOPS I/O Section (Tom Eich)
    f. Review other misc. draft materials
    g. Review Action Items
    h. Review the Status of the Draft MOPS Requirements

2. Review the Draft MOPS Appendix (Robert Eftekari; reference ASSAP-WP19-04_Functional_Architecture_Appendix_v11)
    a. Figure A-1. Block diagram of the Surveillance Processing function was updated and reviewed. The Uncorrelated TCAS Tracks and Traffic State File outputs need to be combined into one traffic file before they enter the Application Processing function.
    b. In order to minimize processing time, the correlation between ADS-B and TIS-B is only performed once per minute. Don Walker recommended that the correlation is also performed during track initiation in order to prevent overlapping of traffic symbols that may happen up to 1 minute.
    c. The Surveillance Processing function is assuming that ADS-B and ADS-R tracks will not require correlation because they should not exist from the same aircraft from a given data link.
    d. **Chris Moody** will add in the assumptions section stating that ASSAP will not resolve issues due to 1090 duplicate addresses from more than one aircraft. This issue has been presented to the Plenary and ASSAP's recommendation was to handle this issue in the link MOPS requirements.

Don Walker will speak with Tom P. (1090 Link MOPS chair) regarding the status on resolving the 1090 duplicate address issue.

e. **Chris Moody** will add in assumptions section that TCAS Mode S address is a required input into ASSAP. The Mode S address will be used for the correlation function.

f. The TIS-B ground system may have cases of providing TIS-B tracks for own-ship. These tracks should be removed in order to prevent ghost tracks over own-ship symbol; therefore own-ship to TIS-B correlation is required. Similar cases can happen with ADS-B traffic but is not as critical, therefore ADS-B to TIS-B correlation is optional; may be needed for customer satisfaction.

g. **Chris Moody** will clarify the dual link assumption requirements in the assumption section.

3. Test Scenario Status (Robert Eftekari, Chris Moody, Larry Bachman ASSAP-WP19-05_Test Scenarios for ASSAP MOPS)

a. The surveillance processing requirements are very general and they are relying on the test for passing the requirements. Once the tests are complete, we may have to decide if more performance requirements are needed.

b. The scenario files are going to be packaged with the ASSAP MOPS document; possible included on a CD. This will have to be coordinated with RTCA.

c. **Larry Bachman** is planning to add noise to the test scenario data. **Randy Sleight** is working on the ADS-B scenarios and should be completed very soon. The TIS-B and ADS-R scenarios should be complete within 2-3 weeks. Larry Bachman requested some information for formatting the TCAS data (e.g. rates, distance). Tom Eich has this information in the draft MOPS I/O section.

d. **Larry Bachman** will provide a data format proposal for the test scenarios.

e. **Dan Kirk** will investigate the need for a test scenario for surface traffic.

4. Test Procedure Status (Bob Burns, Dean Miller; reference ASSAP-WP19-06_ASSAP_MOPS_(dm)_Equipment_10-02-07). Bob Burns and Dean Miller provided updates to the ASSAP test procedure sections. The ASSAP group did not have time to review these updates. Tom Eich combined their changes into the referenced file. Since Dave Thomas is no longer part of the ASSAP group, Dean Miller has volunteered to take ownership of this file.

5. Action Item #92 Status: (Josh Silbermann; reference ASSAP-WP19-07_ASSAP Track Coasting)

a. For a NACp of 5 (EV Acq.), the disjoint coast time is about 14 seconds. Josh updated the file to include disjoint coast times for all NACp values. For ground traffic, the plots were also recreated assuming a 0.2 g turn. For a NACp of 8 (ASSA/FAROA), the disjoint coast time is about 10

seconds which is very close to the value of 11 that is currently used in the MOPS for ASSA/FAROA.

6. Action Item #93 Status: **Don Walker** will rewrite the best track selection requirements section. The "Extrapolated" portion of NACp and NIC will be removed. Don Walker added some requirements to also select the best track based on the most stringent coast time of all the running applications. **Tom Eich** will investigate the possible implications of this requirement and provide a presentation if necessary. **Tom Eich** will add inputs from the CDTI for determining which applications are currently selected/running.

7. Review of the draft MOPS I/O section (Tom Eich; reference ASSAP-WP19-08_ASSAP_MOPS_(te)_IO_10-02-07)
   a. All the I/O subsections are completed. The CDTI group has reviewed the ASSAP to CDTI I/O requirements and updates have been made accordingly.
   b. **Tom Eich** will add a reference to the link MOPS before each bulleted section.
   c. In the TCAS capacity requirement, Tom Eich will add a note for ASSAP to take the highest priority tracks if receiving more than capacity. TCAS usually transmits all tracks in the order of priority.
   d. Jonathan provided a velocity threshold table based on NACv. The CDTI group will provide an acceptable course error. Then Tom Eich will add requirements for invalidating track angle based on this table.

8. Application Quality/Integrity Discussion (Tom Eich & Bob Hilb; reference ASSAP-WP19-09_SDF Data, ASSAP-WP19-10_Realistic NACs and NICs)
   a. Tom Eich presented typical NACp data collected at Louisville and how it affects the ASSA/FAROA application. Tom recommended that the ASSAP reevaluates the applications to account for current equipage without compromising performance.
   b. Bob Hilb's presentation addresses that current ADS-B out equipage is overly conservative with NACp and NIC based on GPSs assuming SA on. The group decided to reevaluate the application requirements based on this new information and make a new best engineering judgment for the requirements in the ASSAP MOPS document. A full analysis would affect the ASSAP MOPS schedule. The current requirements adopted from the ASSA MASPS would reduce the value of the applications.

9. ASSAP Questions for the CDTI group:
   a. Since track correlation may take some processing time to resolve, what should be sent to the CDTI? The CDTI group prefers that only one track is shown on the display during this processing time. Possibly delaying a newly established TCAS track may resolve this problem unless it is a TA or RA. **Robert Eftekari** will provide a simulation of this.

b. The **CDTI group** will tell the ASSAP group the acceptable course error for own-ship track and other traffic. This will be used for invalidating the course value sent to the CDTI from ASSAP.

c. The CDTI function will provide to ASSAP which applications are selected and running. ASSAP will use this information in their best track selection function. The **CDTI group** will clarify the multiple application states that are possible.

10. CDTI Questions for the ASSAP group:

a. What will ASSAP send to the CDTI for altitude? ASSAP will send either relative or actual pressure altitude to the CDTI. Geometric altitude is optional.

b. Does ASSAP need to know which traffic ids are currently beging displayed on the CDTI? Currently ASSAP does not have a minimum requirement for this. Tom Eich mentioned that this may be needed for an external traffic selection function but should not be a minimum requirement within ASSAP or the CDTI.

c. Does ASSAP need a CDTI valid discrete back to ASSAP as being done for TCAS today? The ASSAP group currently does not see a need for this.

11. Review the Status of the Draft MOPS Requirements (reference ASSAP-WP19-11_ASAS MOPS Test Section Writing Responsibilities_10-04-07, ASSAP-WP19-12_ASSAP MOPS Document Section Outline_10-04-07).

a. In the outline, percentage complete estimates were added for each section. Writing assignees were also updated. Tom Eich expressed that the assignees are responsible for their files and others that are providing requirements in those sections must coordinate with the appropriate assignees. **Tom Eich** will gather all the files a week before the next telecon and then provide them to MITRE to be made into one single file for the telecon.

b. Dean Miller updated the test section writing assignees. Dean will take responsibility for the equipment/test file from Dave Thomas.

12. The Action Item List will be reviewed at a later time.

13. Future Telecons and Meetings

a. Next Telecon: 8 Nov 07 (All Day)

b. Next Group Meetings:
   i. 4-6 Dec 07 at Honeywell; Phoenix, AZ (plan for 3 long days)
   ii. 15-17 Jan 08 at Collins; Melbourne, FL
   iii. 21-23 Apr 08 at RTCA; DC
   iv. 4-7 Mar 08 at RTCA; DC

14. Meeting ended at 5PM on 04 Oct 07.